CLAIMS

What is claimed is:

1. A non-contact passive IC card system comprising

an interrogator, and a responder; wherein

said interrogator comprises

a generation unit for generating carrier signal by utilizing microwave as carrier,

a generation unit of clock signal for time management of a circuit in said responder,

a generation unit for generating transmitting signal by multiplexing the carrier signal generated by said generation unit for generating a carrier signal and the clock signal generated by said generation unit for generating a transmitting signal, and

a transmitter unit for transmitting a transmitting signal generated by said generation unit for generating a transmitting signal; and

said responder comprises

a receiver unit of the responder for receiving the transmitting signal from the transmitter unit of said interrogator,

a signal processing unit for processing the transmitting signal received from said receiver unit of the responder,

a power recovery circuit unit for generating power by the transmitting signal received from said receiver unit of the responder,

an extraction unit of clock frequency component for extracting a frequency component of said clock signal by the transmitting signal received from said receiver unit of the responder, and

a clock generation unit for time management of a circuit in said responder by the clock frequency component extracted by said extraction unit of clock frequency component.

2. An interrogator for a non-contact passive IC card system with a responder, comprising

a generation unit for generating carrier signal utilizing microwave as a carrier,

a generation unit of clock signal for time management of a circuit in said responder,

a generation unit for generating a transmitting signal by multiplexing the carrier signal acquired by said generation unit for generating carrier signal and the clock signal generated by said generation unit for generating a transmitting signal, and

a transmitter unit for transmitting a transmitting signal generated by said generation unit for generating a transmitting signal.

3. A responder for a non-contact passive IC card system with an interrogator, comprising

a receiver unit of the responder for receiving the transmitting signal from the transmitter unit of said interrogator,

a signal processing unit for processing the transmitting signal received from said receiver unit of the responder,

a power recovery circuit unit for generating power by the transmitting signal received from said receiver unit of the responder,

an extraction unit of clock frequency component for extracting a frequency component of said clock signal by the transmitting signal received from said receiver unit of the responder, and

a clock generation unit for time management of a circuit in said responder by the clock frequency component extracted by said extraction unit of clock frequency component.

4. An operation method of a non-contact passive IC card system comprising an interrogator and a responder; wherein

said interrogator executes a process comprising

a generation step of generating carrier signal by utilizing microwave as a carrier,

a generation step of clock signal for time management of a circuit in said responder,

a generation step of generating a transmitting signal by multiplexing the carrier signal generated by said generation step of generating carrier signal and the clock signal generated by said generation step of generating transmitting signal, and

a transmission step of transmitting a transmitting signal generated by said generation step of generating a transmitting signal; and

said responder executes a process comprising

a reception step in the responder of receiving the transmitting signal from the transmission step in said interrogator,

a signal processing step of processing the transmitting signal received from said reception step in the responder,

a power recovery step of generating power by the transmitting signal received from said reception step in the responder,

an extraction step of clock frequency component of extracting a frequency component of said clock signal by the transmitting signal received from said reception step in the responder, and

a clock generation step for time management of a circuit in said responder by the clock frequency component extracted by said extraction step of clock frequency component.

5. The IC card system according to Claim 1, wherein

a frequency of said microwave is included in VHF-band (30 MHz ~ 300 MHz), UHF-band (300 MHz ~ 3 GHz), and SHF-band (3 GHz ~ 30 GHz).

6. The non-contact passive IC card system according to Claim 1, wherein

said signal processing unit comprises a demodulation means for sampling and demodulating the transmitting signal received from the interrogator according to the clock frequency component oscillated by the clock oscillation unit.

7. The responder according to Claim 3, wherein

said signal processing unit comprises a demodulation means for sampling and demodulating the received transmitting signal from the interrogator according to the clock frequency component oscillated by the clock oscillation unit.

8. The operation method of the non-contact passive IC card system according to Claim 4, wherein

said signal processing step includes a process comprising a demodulation step of sampling and demodulating the received transmitting signal from the interrogator according to the clock frequency component oscillated by the clock oscillation unit.